

Remarks/Arguments

The Final Office Action mailed February 3, 2009 has been reviewed and carefully considered.

Claim 5 has been amended. Claims 2, 4, 5, 8, 11, 13, 14 and 16 are now pending in this application. No new matter has been added.

Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

Rejections under 35 U.S.C. 112, second paragraph

Claim 5 has been rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. The applicant gratefully acknowledges the Examiner's indication of the discrepancy. The claim has been amended in a way believed to overcome the rejection. Withdrawal of the rejection is respectfully requested.

Rejections under 35 U.S.C. 103(a)

Claims 2, 4, 5, 8, 11, 13, 14, and 16 stand rejected under U.S.C. 103(a) as purportedly being unpatentable over U.S. Patent No. 4,052,029 to Townsend (hereinafter 'Townsend') in view of U.S. Patent No. 6,558,085 to Hall (hereinafter 'Hall').

Claim 16 of the present application recites:

A mine support comprising:

a deformable tubular sleeve made from a ductile metal,
 a first aerated cementitious material with a first strength characteristic inside a first interior portion of the sleeve and filling said first interior portion of the sleeve; and

 a second aerated cementitious material with a second strength characteristic which differs from the first strength characteristic inside a remainder of the sleeve interior and filling said remainder of the sleeve interior;

 the first interior portion having a length, in an axial direction of the sleeve, which is greater than the length of the remainder of the sleeve interior in the axial direction of the sleeve and wherein, in use, one aerated cementitious material overlies the other aerated cementitious material.

It is respectfully submitted that claim 16 is patentable over Townsend and/or Hall for several reasons, as discussed herein below. Firstly, Townsend does not disclose or suggest the use of a single deformable sleeve. Rather, Townsend is directed to a mine support employing two separate sleeves to permit telescopic movement and slow adjustment of the mine support length (see, e.g. Townsend, FIGS. 1-7; column 2, lines 25-27). In Townsend, the lower sleeve which contains the timber element 16 is referred to as a plunger that extends into a socket formed by the upper sleeve 10 in which the timber element 1 is located (see, e.g., Townsend, claim 1). Thus, one sleeve moves relatively to the other. Townsend nowhere discloses or suggests the use of a single sleeve for containing the two timber elements.

Secondly, Townsend does not disclose or suggest the use of two materials having different strength characteristics to fill a sleeve. Contrary to the assertions posed in the Office Action, the load bearing elements 1 and 16 are identical. In particular, Townsend teaches that “[e]ach tube is shown to contain a load resisting material which consists of a timber element 16” (Townsend, column 2, lines 12-13). Despite the fact that the timber elements in each sleeve are labeled as “1” and “16,” respectively, in FIG. 1, Townsend provides no indication whatsoever that the two timber elements have different strength characteristics. In addition, it should be noted that, although Townsend mentions the use of a polyurethane filler, the filler is used simply as a spacer between the two load bearing timber elements (see, e.g., Townsend column 2, lines 28-32). Even with the spacer, the configuration taught in Townsend does not anticipate the features of claim 16, as the spacer does not provide a load bearing function for the support and does not fill a remainder of the sleeve.

Furthermore, it would not be obvious for one of ordinary skill in the art to modify the mine support disclosed in Townsend in view of Hall to anticipate features recited in claim 16. For example, with regard to Townsend’s disclosure of the use of two sleeves, modifying the support to employ a single sleeve is not obvious, as the modification would change the entire principle of operation of Townsend. “If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” MPEP §2143.01 (citing *In re Ratti*,

270 F.2d 810 (CCPA 1959)). The principle of operation of Townsend is the use of telescopic sleeves to permit extensive length adjustment and prolong the time period during which the support may prop a collapsed hanging wall (see, e.g., Townsend, column 1, lines 24-26; column 1, lines 42-50; column 2, lines 25-27; FIGS. 2-7 and accompanying text). The telescopic feature of Townsend is essential to achieving the desired deformation and length adjustment effects of the support (see, e.g., Townsend, column 2, lines 25-27; FIGS. 2-7 and accompanying text). Thus, modifying the support to use only one sleeve would subvert the entire principle of operation of Townsend. Moreover, Townsend specifically teaches away from using a single sleeve, as Townsend regards the second sleeve and its timber element as a plunger which is engaged with the socket formed by the other sleeve (see, e.g., Townsend, claim 1). Thus, it would not be obvious to modify the mine support disclosed in Townsend to employ a single sleeve.

In addition, in view of Hall, it would also not be obvious to modify Townsend to use vertical load bearing elements 1, 16 having different strength characteristics. Although Hall discloses that two different materials may be employed in a mine support in different compartments, Hall nowhere discloses or suggests vertically overlaying one material with a different material in a single compartment. Rather, Hall discloses that a first load bearing material is filled at or near the center of the mine support to form a single, consistent central pillar while the second material, with a lesser load-bearing capacity, is filled around the central pillar (see, e.g., Hall, column 6 lines 15-21; column 6, lines 62-67). Thus, it would not be obvious to modify the mine support of Townsend to use vertical load bearing elements 1, 16 having different strength characteristics in view of Hall.

Accordingly, claim 16 is patentable over Townsend and/or Hall, at least because neither reference, taken singly or in combination, disclose or render obvious filling a single sleeve with a first material and filling a remainder of the sleeve with a second material having a different strength characteristic. Further, claims 2, 4, 5, 8, 11, 13, 14 are patentable over the references due at least to their dependencies from claim 16. As such, withdrawal of the rejection is respectfully requested.

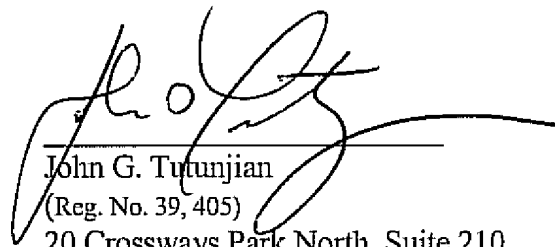
In view of the foregoing, Applicant respectfully requests that the rejections of the claims set forth in the Office Action of February 3, 2008 be withdrawn, that pending claims

2, 4, 5, 8, 11, 13, 14 and 16 be allowed, and that the case proceed to early issuance of Letters Patent in due course.

It is believed that no additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicant's representatives Deposit Account No. 50-1433.

Respectfully submitted,

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